

Syllabus

for course at advanced level

Inference Theory
Inferensteori

7.5 Higher Education
Credits
7.5 ECTS credits

Course code:	ST4301
Valid from:	Autumn 2021
Date of approval:	2021-01-20
Department	Department of Statistics
Main field:	Statistics
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus was approved by the board of the Department of Statistics on January 20, 2020.

Prerequisites and special admittance requirements

90 ECTS credits first-cycle (basic level) in Statistics or equivalent. English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
11IT	Inference theory exam	7.5

Course content

The course consists of one part and is examined through one test in accordance with the examination codes above, 11IT which is referred to as Test 1 in the following.

The course presents, in a stringent way, basic statistical principles such as the principle of sufficiency, ancillarity, invariance, and conditionality. Bayesian, likelihood-based and Neyman-Pearson inference are applied and exemplified through point estimation, interval estimation, and model selection.

Learning outcomes

To pass the course, the student must be able to:

- account for and apply statistical principles and important theorems of inference theory
- derive important point and interval estimators as well as test statistics in some selected applications
- account for convergence properties of statistics.

Education

The instruction consists of lectures, exercises and computer labs. The language of instruction is English.

More detailed information may be found in the course description. The course description is posted on the Department of Statistics' website www.statistics.su.se/utbildning no later than one month before the start of the course.

Forms of examination

a) The course is examined by assessing the students' mastery of the expected outcomes. Test 1 is examined by

means of a written individual exam. The examination is in English.

b) Test 1 is graded according to a seven-point grading scale: A = Excellent, B = Very Good, C = Good, D = Satisfactory, E = Sufficient, Fx = Insufficient, F = Completely insufficient. Both Fx and F are failed grades that require re-examination.

c) The grading criteria for Test 1 are communicated in writing to the students at the start of the course.

d) In order to pass the entire course, a minimum grade of E on Test 1. The final grade for the entire course is equal to the grade on Test 1. Examination assignments that are not submitted on time will not be assessed.

e) For each course instance, at least two examination opportunities must be provided for all tests. During a semester when the course is not offered, at least one examination opportunity must be provided for all tests.

Students who fail the test are entitled to take additional tests as long as the course is offered in order to achieve a passing grade.

Students who have received the grade Fx or F on Test 1 twice in a row by one and the same examiner have the right to have another examiner appointed at the next exam, unless there are special reasons that militate against it. A request to this effect must be sent in writing to the head of department.

Students who have received a grade of E or higher, may not retake a test in order to obtain a higher grade.

f) It is not possible for students who have received the grade Fx to increase the grade to a passing grade by submitting supplementary assignments.

Interim

When this syllabus is repealed, the student has the right to be examined once per semester according to the present syllabus during a completion period of three semesters. A request to this effect must be sent in writing to the head of department.

Limitations

This course may not be part of a degree together with any of the courses Inference theory, 7.5 ECTS credit points ((ST703A, ST723A or ST745A) or any other course which fully or partially conforms with the contents of this course.

Misc

The course replaces the course Inference Theory, 7.5 credits (ST745A).

Required reading

The course literature is specified separately in an attachment. The current course literature (and other teaching resources) is posted on the Department of Statistics' website, www.statistics.su.se/utbildnin, no later than two months before the start of the course.